

M. Leila Mays

Software developers:
Chiu Wiegand (lead), Rick Mullinix
and the CCMC/SWRC team

14 January 2014

<http://kauai.ccmc.gsfc.nasa.gov/DONKI>

Feedback and suggestions are welcome!

Email: chiu.wiegand@nasa.gov, m.leila.mays@nasa.gov

Space Weather Web Tools from CCMC/SWRC:



Space Weather
Scoreboard



Space Weather
DONKI



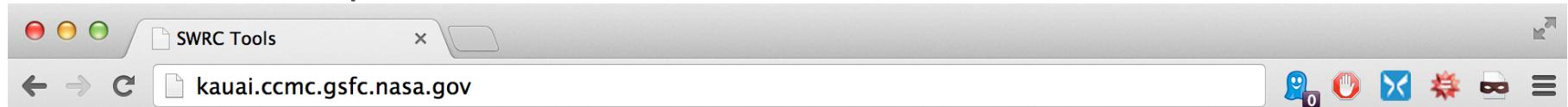
WSA-ENLIL+Cone
1-Click



Stereo CAT
CME Analysis Tool

<http://kauai.ccmc.gsfc.nasa.gov/>

Space Weather Web Tools from CCMC/SWRC:



Space Weather
Scoreboard



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DONKI



WSA-ENLIL+Cone
1-Click



Stereo CAT
CME Analysis Tool

<http://kauai.ccmc.gsfc.nasa.gov/>

Before DONKI

- Blogs for Daily and Weekly space weather activity
 - Difficult to Search
 - Difficult to describe a chain of events
 - Difficult to disseminate
 - What we want to get away from:
<http://screencast.com/t/750Ci2aKM>
- Static email lists for notifications
 - Manually generated following templates
 - Tedious and Error-prone



Database of Notifications, Knowledge, and Information

- One-stop on-line tool for SWRC forecasters:
 - Chronicles the daily interpretations of space weather observations, analysis, models, forecasts, and notifications.
 - Automatic dissemination of forecasts and notifications
- Intelligent linkages, relationships, cause-and-effects between space weather activities
- Comprehensive knowledge-base search functionality to support anomaly resolution and **space science research**:
 - Space weather activity archive (flares, CMEs and simulation results, SEPs, geomagnetic storms,...) with links between activities
 - GSFC space weather alert and weekly report archive
- Enables remote participation by students, world-wide partners, model and forecasting technique developers

Click here to get started searching the database by space weather activity type and date

Go to:

- [DONKI Home](#)
- [**Search Space Weather Activity**](#)
- [Search Notification Archive](#)
- [Login](#)
- [New User Registration](#)

Search Space Weather Activity Archive

Space Weather Event Type : Solar Flare Solar Energetic Particle Coronal Mass Ejection Interplanetary Shock Magnetopause Crossing Geomagnetic Storm Radiation Belt Enhancement High Speed Stream WSA-ENLIL+Cone Model

Optional start date in format (e.g. 2013-01-31) :

Optional end date in format (e.g. 2013-06-30) :

Select start and end date for search

For example, Solar Energetic Particle (SEP), to see all SEP events above threshold values



DONKI

Search Space Weather Activity Archive

Space Weather Event Type :

Solar Energetic Particle

Optional start date in format (e.g. 2013-01-31) : 2013-05-01

Optional end date in format (e.g. 2013-06-30) : 2013-05-31

search

<u>Event Type</u>	<u>Activity ID</u>	<u>SEP Event Time</u>	<u>Associated Instrument</u>
Solar Energetic Particle	2013-05-13T04:12:00-SEP-001	2013-05-13T04:12Z	STEREO B: IMPACT 13-100 MeV
Solar Energetic Particle	2013-05-13T18:02:00-SEP-001	2013-05-13T18:02Z	STEREO B: IMPACT 13-100 MeV
Solar Energetic Particle	2013-05-15T13:25:00-SEP-001	2013-05-15T13:25Z	GOES13: SEM/EPS >10 MeV
Solar Energetic Particle	2013-05-22T15:05:00-SEP-001	2013-05-22T15:05Z	GOES13: SEM/EPS >10 MeV
Solar Energetic Particle	2013-05-22T15:05:00-SEP-002	2013-05-22T15:05Z	GOES13: SEM/EPS >100 MeV
Solar Energetic Particle	2013-05-22T15:30:00-SEP-001	2013-05-22T15:30Z	SOHO: COSTEP 15.8-39.8 MeV

All columns are sortable!
(click column headings)

For example, Solar Energetic Particle (SEP), lists all SEP events above threshold values at various locations.



DONKI

Go to:

- [DONKI Home](#)
- [Search Space Weather Activity](#)
- [Search Notification Archive](#)
- [Login](#)
- [New User Registration](#)

Search Space Weather Activity Archive

Space Weather Event Type :

--- ALL ---

Optional start date in format (e.g. 2013-01-31) :

Optional end date in format (e.g. 2013-06-30) :

--- ALL ---

Solar Flare

Solar Energetic Particle

Coronal Mass Ejection

Interplanetary Shock

Magnetopause Crossing

Geomagnetic Storm

Radiation Belt Enhancement

High Speed Stream

✓ WSA-ENLIL+Cone Model

For another example, select
“WSA-ENLIL+Cone Model” to see
all CME simulations in a certain
date range.



DONKI

Search Space Weather Activity Archive

Space Weather Event Type :

WSA-ENLIL+Cone Model

Optional start date in format (e.g. 2013-01-31) : 2013-05-03

Optional end date in format (e.g. 2013-06-30) : 2013-05-31

[Generate Report for WSA-ENLIL+Cone Inputs](#)

Selecting “WSA-ENLIL +Cone Model” lists all CME simulations in a certain date range.

All columns are sortable!
(click column headings)

Model Name	Model Completion Time	CME Input(s)	Predicted Earth Impact	Predicted Other Location(s) Impact
WSA-ENLIL+Cone	2013-05-03T09:33Z	<ul style="list-style-type: none"> CME: 2013-05-02T14:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	
WSA-ENLIL+Cone	2013-05-03T18:07Z	<ul style="list-style-type: none"> CME: 2013-05-03T18:00:00-CME-001(CME Analysis) 	No or little impact to Earth.	Spitzer: 2013-05-06T14:32Z
WSA-ENLIL+Cone	2013-05-04T12:48Z	<ul style="list-style-type: none"> CME: 2013-05-03T18:00:00-CME-001(CME Analysis) CME: 2013-05-03T22:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	Spitzer: 2013-05-06T06:39Z STEREO B: 2013-05-06T16:39Z
WSA-ENLIL+Cone	2013-05-04T13:52Z	<ul style="list-style-type: none"> CME: 2013-05-03T18:00:00-CME-001(CME Analysis) CME: 2013-05-03T22:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	Spitzer: 2013-05-06T15:31Z
WSA-ENLIL+Cone	2013-05-05T11:58Z	<ul style="list-style-type: none"> CME: 2011-05-24T11:24:00-CME-001(CME Analysis) 	Earth Shock Arrival Time = 2011-06-01T02:38Z Duration of disturbance (hr) = Minimum magnetopause standoff distance: $R_{min}(Re) = 6.6$ Possible Kp index: (kp)90=1 (kp)135= (kp)180=5	

Search Space Weather Activity Archive

Space Weather Event Type :

WSA-ENLIL+Cone Model

Optional start date in format (e.g. 2013-01-31) : 2013-05-03

Optional end date in format (e.g. 2013-06-30) : 2013-05-31

[Generate Report for WSA-ENLIL+Cone Inputs](#)

Shows impact prediction summary
for each simulation

<u>Model Name</u>	<u>Model Completion Time</u>	<u>CME Input(s)</u>	<u>Predicted Earth Impact</u>	<u>Predicted Other Location(s) Impact</u>
WSA-ENLIL+Cone	2013-05-03T09:33Z	<ul style="list-style-type: none"> CME: 2013-05-02T14:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	
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WSA-ENLIL+Cone	2013-05-04T12:48Z	<ul style="list-style-type: none"> CME: 2013-05-03T18:00:00-CME-001(CME Analysis) CME: 2013-05-03T22:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	Spitzer: 2013-05-06T06:39Z STEREO B: 2013-05-06T16:39Z
WSA-ENLIL+Cone	2013-05-04T13:52Z	<ul style="list-style-type: none"> CME: 2013-05-03T18:00:00-CME-001(CME Analysis) CME: 2013-05-03T22:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	Spitzer: 2013-05-06T15:31Z
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Search Space Weather Activity Archive

Space Weather Event Type :

WSA-ENLIL+Cone Model

Optional start date in format (e.g. 2013-01-31) : 2013-05-03

Optional end date in format (e.g. 2013-06-30) : 2013-05-31

[Generate Report for WSA-ENLIL+Cone Inputs](#)

Click here to get full simulation results and graphics for a given run.

<u>Model Name</u>	<u>Model Completion Time</u>	<u>CME Input(s)</u>	<u>Predicted Earth Impact</u>	<u>Predicted Other Location(s) Impact</u>
WSA-ENLIL+Cone	2013-05-03T09:33Z	<ul style="list-style-type: none"> CME: 2013-05-02T14:36:00-CME-001(CME Analysis) 	No or little impact to Earth.	
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WSA-ENLIL+Cone	2013-05-05T11:58Z	<ul style="list-style-type: none"> CME: 2011-05-24T11:24:00-CME-001(CME Analysis) 	Earth Shock Arrival Time = 2011-06-01T02:38Z Duration of disturbance (hr) = Minimum magnetopause standoff distance: $R_{min}(Re) = 6.6$ Possible Kp index: (kp)90=1 (kp)135=1 (kp)180=5	 DONKI

Full simulation results for the selected run:

WSA-ENLIL+Cone Model with Completion Time: 2013-05-04T12:48Z

CME input parameters are listed for each activity ID (click ID for more CME information)

Model Inputs:

[2013-05-03T18:00:00-CME-001](#) with [CME Analysis](#): Lon.=-89.0, Lat.=18.0, Speed=760.0, HalfAngle=60.0, Time21.5=2013-05-03T22:30Z
[2013-05-03T22:36:00-CME-001](#) with [CME Analysis](#): Lon.=-86.0, Lat.=-18.0, Speed=520.0, HalfAngle=22.0, Time21.5=2013-05-04T05:37Z

Model Outputs:

Earth Impact:

No or little impact to Earth.

Impact prediction times

Other Location(s) Impact:

Spitzer with estimated shock arrival time 2013-05-06T06:39Z
STEREO B with estimated shock arrival time 2013-05-06T16:39Z

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-den.gif

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-vel.gif

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-den-Stereo_A.gif

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-den-Stereo_B.gif

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-vel-Stereo_A.gif

Inner Planets Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_anim.tim-vel-Stereo_B.gif

Timelines Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_ENLIL_CONE_timeline.gif

Timelines Link = http://iswa.gsfc.nasa.gov/downloads/20130503_223000_ENLIL_CONE_Kp_timeline.gif

Links to simulation movies and plots



DONKI

DONKI also shows intelligent linkages, relationships, cause-and-effects between space weather activities

Search Space Weather Activity Archive

Space Weather Event Type : 

Optional start date in format (e.g. 2013-01-31) :

Optional end date in format (e.g. 2013-06-30) :

<u>Event Type</u>	<u>Activity ID</u>	<u>FLR Start Time</u>	<u>Associated Instrument</u>	<u>FLR Peak Time</u>	<u>FLR End Time</u>	<u>Class</u>	<u>Source Location</u>
Solar Flare	2013-05-03T17:29:00-FLR-001	2013-05-03T17:29Z	GOES15: SEM/XRS 1.0-8.0	2013-05-03T17:32Z		M5.7	N15E85
Solar Flare	2013-05-13T01:53:00-FLR-001	2013-05-13T01:53Z	GOES15: SEM/XRS 1.0-8.0	2013-05-13T02:17Z		X1.6	N10E89
Solar Flare	2013-05-13T15:40:00-FLR-001	2013-05-13T15:40Z	GOES15: SEM/XRS 1.0-8.0	2013-05-13T16:05Z		X2.8	N10E89
Solar Flare	2013-05-14T01:00:00-FLR-001	2013-05-14T01:00Z	GOES15: SEM/XRS 1.0-8.0	2013-05-14T01:11Z		X3.2	N10E89
Solar Flare	2013-05-15T01:10:00-FLR-001	2013-05-15T01:10Z	GOES15: SEM/XRS 1.0-8.0	2013-05-15T01:48Z		X1.2	N11E63
Solar Flare	2013-05-22T12:30:00-FLR-001	2013-05-22T12:30Z	GOES15: SEM/XRS 1.0-8.0	2013-05-22T13:38Z		M7.3	N13W75

For example, search for solar flares during May 2013, and click [here](#) for more information on the M7.3 flare



More details and relationships for the M7.3 flare:

Solar Flare

Start Time: 2013-05-22T12:30Z (GOES15: SEM/XRS 1.0-8.0)

Peak Time: 2013-05-22T13:38Z

End Time:

Intensity: M7.3 class

Source region N13W75

Activity ID: 2013-05-22T12:30:00-FLR-001 (version 1)

Note:

Submitted on 2013-07-15T18:32Z by Dan Comberiate

An Alert with ID [20130522-AL-001](#) was sent on 2013-05-22T15:30Z

Click the alert ID to see a copy of the flare alert.

All directly linked events:

[2013-05-22T13:24:00-CME-001](#)

[2013-05-22T15:05:00-SEP-001](#)

GOES13: SEM/EPS >10 MeV

[2013-05-22T15:05:00-SEP-002](#)

GOES13: SEM/EPS >100 MeV

[2013-05-22T15:30:00-SEP-001](#)

SOHO: COSTEP 15.8-39.8 MeV

Related events are listed at the bottom. This flare was associated with a CME and also an SEP event near Earth

Click on the activity IDs for information on the CME or SEPs.



DONKI

Alternatively, search the notification database by space weather activity type and date

Go to:

- [DONKI Home](#)
- [Search Space Weather Activity](#)
- [**Search Notification Archive**](#)
- [Login](#)
- [New User Registration](#)

Choose event type, or weekly report

Search Space Weather Notification Archive

Notification for Space Weather Event Type :

--- ALL ---

(Optional) Search start date from (e.g. 2013-01-31) :

(Optional) Search end date to (e.g. 2013-06-30) :

search

Select start and end date for search

For example, select ALL to list all alert types and weekly reports.

✓ --- ALL ---
Solar Flare
Solar Energetic Particle
Coronal Mass Ejection
Interplanetary Shock
Magnetopause Crossing
Geomagnetic Storm
Radiation Belt Enhancement
SW Report



DONKI

Search Space Weather Notification Archive

Notification for Space Weather Event Type :

(Optional) Search start date from (e.g. 2013-01-31) :

(Optional) Search end date to (e.g. 2013-06-30) :

Message ID	Sent Date	For SW Event(s)	Sent By
20130514-AL-003	2013-05-14T04:55Z	CMEAnalysis CME	Dan Comberiate
20130514-AL-002	2013-05-14T03:50Z	CMEAnalysis CME	Dan Comberiate
20130514-AL-001	2013-05-14T01:45Z	FLR	Dan Comberiate
20130513-AL-008	2013-05-13T19:15Z	CMEAnalysis CME	Dan Comberiate
20130513-AL-007	2013-05-13T18:35Z	SEP	Dan Comberiate
20130513-AL-006	2013-05-13T18:20Z	CMEAnalysis CME	Dan Comberiate
20130513-AL-005	2013-05-13T16:25Z	FLR	Dan Comberiate
20130513-AL-004	2013-05-13T06:00Z	CMEAnalysis CME	Dan Comberiate
20130513-AL-003	2013-05-13T05:20Z	CMEAnalysis CME	Dan Comberiate
20130513-AL-002	2013-05-13T04:55Z	SEP	Dan Comberiate
20130513-AL-001	2013-05-13T02:52Z	FLR	Dan Comberiate
20130508-7D-001	2013-05-08T16:06Z	Report	chiu wiegand
20130503-AL-001	2013-05-03T18:20Z	FLR	Dan Comberiate
20130501-7D-001	2013-05-01T22:15Z	Report	chiu wiegand

Selecting ALL lists all alert types and weekly reports in a certain date range.

Click on the message ID to see a copy the alert.

All columns are sortable!
(click column headings)



DONKI



Demo: DONKI

Database of Notifications, Knowledge, and Information

<http://kauai.ccmc.gsfc.nasa.gov/DONKI/>

*Example: [2013-05-22 M7.3 flare](#) and related activity,
[2012-03-07 X5.4 flare](#).*

DONKI - Caveats

- Data entry for past events (using logs and alert archives) was performed by students:
 - Could be errors, mostly due to typos, or duplicate entries
 - We are adding data quality flags to indicate whether entries have been “checked”
 - Entries from Aug 2013 onwards is mostly verified.
- Older ENLIL simulations from 2010- May 2011 have not yet been entered (different format), coming soon.
- Search filters combinations will be added in the near future
- More data export options coming (suggestions?)
- CME measurements are made in real-time, with limited data.

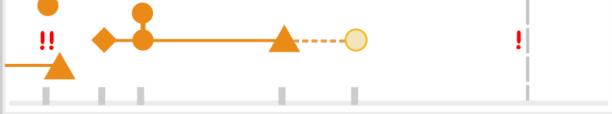
▼ Logged in as - Rick Mullinx

 Stream
 Add Event Chain
 Add Flare
 Add CME
 Add SEP
 Add GST
 Add RBE
 Add MPC
 Add IPS
 Add ENLIL
 Add Generic Entry
 Add Weekly Report
 Add Daily Report
 Merge Nuggets
 Email Settings

iSWA

CME TOOL

Enlil 1-Click Submission



Date/Time of alert
Information here
Parameters here
More parameters here
[View Data](#)

Nugget ID
Submitted automatically by Computer A
Date/Time of submission

Comments-0 [Add Comment](#) [Edit](#)



Date/Time of Weekly Report
Information here
Parameters here

Apart of [Event Chain 124:](#)

Nugget ID
Submitted manually by Leila
Date/Time of submission

Comments-0 [Add Comment](#) [Edit](#)



Date/Time, Duration of Event Chain

M Class Flare: 11-1-12 20:00:00
CME: 11-1-12 24:00:00
CME: 11-1-12 24:00:00
Prediced Impact: 11-4-12

Nugget ID
Created manually by Leila
Date/Time of submission

Comments-0 [Add Comment](#) [Edit](#)



Date/Time of CME
Information here
Parameters here
[View Data](#)

Apart of [Event Chain 124:](#)

Nugget ID
Submitted automatically by Enlil Cone Model Run
Date/Time of submission

Comments-1 [Add Comment](#) [Edit](#)

Leila - We might need to re-run this model.



Date/Time of Flare
Information here
Parameters here
[View Data](#)

Apart of [Event Chain 124:](#)

Nugget ID
Submitted manually by Leila
Date/Time of submission

Comments-1 [Add Comment](#) [Edit](#)

[<-prev](#) [next->](#)

DONKI

Future Directions



- Search with filters will be added in the near future
- More data export options
- Clear flags indicating data quality



Logged in as - Rick Mullinx

Stream

Add Event Chain

Add Flare

Add CME

Add SEP

Add GST

Add RBE

Add MPC

Add IPS

Add ENLIL

Add Generic Entry

Add Weekly Report

Add Daily Report

Merge Nuggets

Email Settings

Change Settings

Reset



Email Settings

Email Address:



Richard.E.Mullinx@nasa.gov

edit



Flare Alerts



SEPs Alerts



Weekly Reports



Daily Logs



Flare Nugget



CME Nugget



Event Chain Creation



Event Chain Edit/Addition



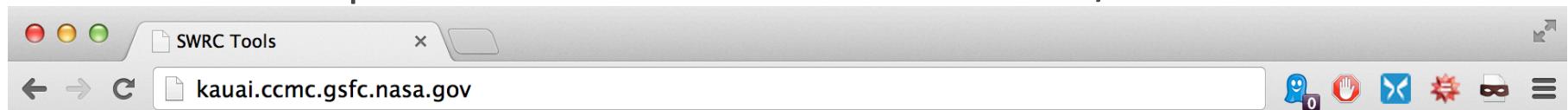
Generic Nugget



Nugget Merging



Space Weather Web Tools from CCMC/SWRC:



Space Weather
Scoreboard



Space Weather
DONKI



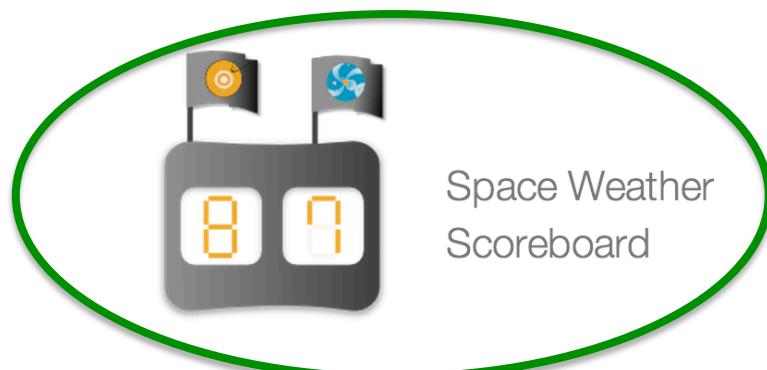
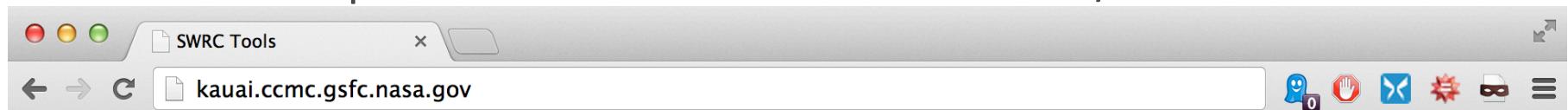
WSA-ENLIL+Cone
1-Click



Stereo CAT
CME Analysis Tool

<http://kauai.ccmc.gsfc.nasa.gov/>

Space Weather Web Tools from CCMC/SWRC:



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Space Weather
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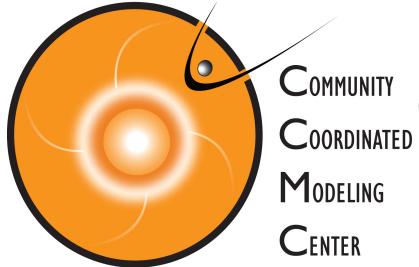


WSA-ENLIL+Cone
1-Click



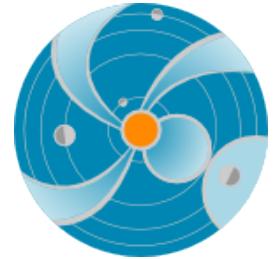
Stereo CAT
CME Analysis Tool

<http://kauai.ccmc.gsfc.nasa.gov/>



CME Arrival Time Scoreboard

developed at the CCMC



The CME scoreboard is a research-based forecasting methods validation activity which provides a central location for the community to:

- submit their forecast in real-time
- quickly view all forecasts at once in real-time
- compare forecasting methods when the event has arrived

<http://swrc.gsfc.nasa.gov/main/cmemodels>

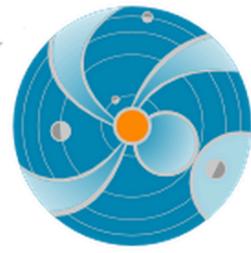
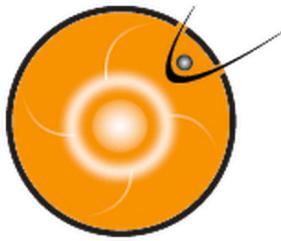
<http://kauai.ccmc.gsfc.nasa.gov/SWScoreBoard>



Please join! All prediction methods are welcome and all are encouraged to participate. Currently registered models include:

Anemomilos, ESA Model, H3DMHD (HAFv.3 +3DMHD), HAFv.3, STOA, WSA-Enlil + Cone Model, BHV Model, DBM, ECA Model, Expansion Speed Prediction Model, HelTomo, HI J-map technique, TH Model

The scoreboard also includes predictions from the SWRC (Space Weather Research Center) which is a CCMC branch carrying out in-house research-based space weather ops team



Space Weather ScoreBoard

[Login](#)

Space Weather ScoreBoard

CME arrival time predictions from the research community:

The Space Weather ScoreBoard (developed at the Community Coordinated Modeling Center, [CCMC](#)) is a research-based forecasting methods validation activity which provides a central location for the community to:

- submit their forecast in real-time
- quickly view all forecasts at once in real-time
- compare forecasting methods when the event has arrived

Using this system:

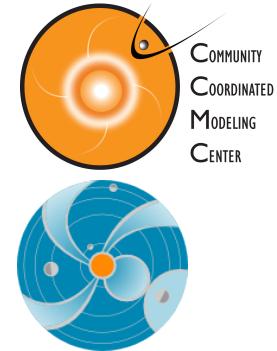
- Anyone can view prediction tables
- Users can enter in your CME shock arrival time forecast after logging in:
 - Registered Users: Begin by finding your CME under the "Active CMEs" section, then click "Add Prediction" and select your forecasting "Method Type" from the list. (Click [here](#) to register for an account.)
 - Power Users: If you do not see your CME listed under the "Active CMEs" section, click "[Add CME](#)" to get started (Click [here](#) to request power user privileges). To enter the actual CME shock arrival time, click "[Edit CME](#)" after you are done entering your prediction(s).
- [Click here to see a list of registered methods](#). If you would like to register your prediction method, please send an email to [M. Leila Mays](#) or [Yihua Zheng](#) with your model/technique details.

<http://kauai.ccmc.gsfc.nasa.gov/SWScoreBoard>

Anyone can view predictions, please register to submit predictions.



Community predictions for the January 7, 2014 CME (X1.2 flare):



Active CMEs:

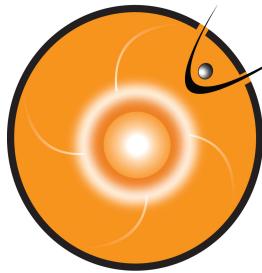
No Active CME

Past CMEs:

CME: 2014-01-07T18:24:00-CME-001						
Actual Shock Arrival Time: 2014-01-09T19:32Z						
Observed Geomagnetic Storm Parameters:						
<hr/>						
Predicted Shock Arrival Time	Difference (hrs)	Submitted On	Lead Time (hrs)	Predicted Geomagnetic Storm Parameter(s)	Method	Submitted By
2014-01-09T19:26Z (-10.0h, +10.0h)	-0.10	2014-01-07T21:00Z	46.53	---	STOA	Leila Mays (GSFC) Detail
2014-01-09T13:00Z (-7.0h, +7.0h)	-6.53	2014-01-08T23:17Z	20.25	Max Kp Range: 6.0 - 8.0	WSA-ENLIL + Cone	Duty Forecaster (ASFC) Detail
2014-01-09T12:00Z (-7.0h, +7.0h)	-7.53	2014-01-08T06:32Z	37.00	---	WSA-ENLIL + Cone	RWC Jeju (KSWC) Detail
2014-01-09T11:22Z (-11.7h, +9.1h)	-8.17	2014-01-09T18:57Z	0.58	Max Kp Range: 3.0 - 5.0	Ensemble WSA-ENLIL + Cone (GSFC SWRC)	Leila Mays (GSFC) Detail
2014-01-10T04:04Z (-16.0h, +36.0h)	8.53	2014-01-08T14:56Z	28.60	Max Kp Range: 8.0 - 8.0 Dst min. in nT: -300	COMESEP	Andy Devos (SIDC) Detail
2014-01-09T08:02Z	-11.50	2014-01-08T16:37Z	26.92	---	Expansion Speed Prediction Model	Alisson Dallago (INPE) Detail
2014-01-09T08:00Z	-11.53	2014-01-08T01:31Z	42.02	Max Kp Range: 6.0 - 7.0	WSA-ENLIL + Cone (NOAA/SWPC)	Leila Mays (GSFC) Detail
2014-01-09T04:30Z (-2.5h, +2.5h)	-15.03	2014-01-08T05:02Z	38.50	Max Kp Range: 5.0 - 8.0	Other (SIDC)	Leila Mays (GSFC) Detail
2014-01-09T04:00Z (-6.0h, +6.0h)	-15.53	2014-01-08T09:42Z	33.83	---	DBM	Manuela Temmer (UNIGRAZ) Detail
2014-01-09T02:00Z	-17.53	2014-01-08T17:53Z	25.65	Max Kp Range: 8.0 - 9.0	BHV	Volker Bothmer (UGOE) Detail
2014-01-09T01:00Z	-18.53	2014-01-08T23:00Z	20.53	Dst min. in nT: -142 Dst min. time: 2014-01-09T12:00Z	Anemomilos	WKent Tobiska (SET SWD) Detail
2014-01-09T00:38Z (-7.0h, +7.0h)	-18.90	2014-01-08T00:41Z	42.85	Max Kp Range: 6.0 - 8.0	WSA-ENLIL + Cone (GSFC SWRC)	Leila Mays (GSFC) Detail
2014-01-09T00:17Z (-6.9h, +9.2h)	-19.25	2014-01-08T04:11Z	39.35	Max Kp Range: 6.0 - 8.0	Ensemble WSA-ENLIL + Cone (GSFC SWRC)	Leila Mays (GSFC) Detail
2014-01-08T22:00Z	-21.53	2014-01-08T03:17Z	40.25	Dst min. in nT: -146 Dst min. time: 2014-01-09T11:00Z	Anemomilos	WKent Tobiska (SET SWD) Detail
2014-01-08T12:30Z	-31.03	2014-01-08T05:58Z	37.57	---	ESA	Leila Mays (GSFC) Detail

Columns are sortable

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Begin by clicking **Add Prediction** under the "Active CMEs" section and select your forecasting "Method Type" from the list. While logged in, if you do not see any CMEs listed under the "Active CMEs" section, click **Add CME** to get started.

Space Weather ScoreBoard

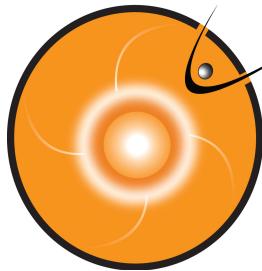
Using this system:

- Anyone can view prediction tables
- Users can enter in your CME shock arrival time forecast after logging in:
 - Registered Users: Begin by finding your CME under the "Active CMEs" section, then click "Add Prediction" and select your forecasting "Method Type" from the list. (Click [here](#) to register for an account.)
 - Power Users: If you do not see your CME listed under the "Active CMEs" section, click "[Add CME](#)" to get started (Click [here](#) to request power user privileges). To enter the actual CME shock arrival time, click "*Edit CME*" after you are done entering your prediction(s).
- [Click here to see a list of registered methods](#). If you would like to register your prediction method, please send an email to [M. Leila Mays](#) or [Yihua Zheng](#) with your model/technique details.

Active CMEs:

Note: If you can't find your CME below, please click "[Add CME](#)" to add your CME. To enter the actual CME shock arrival time, click "*Edit CME*" after you are done entering your prediction(s).

CME: 2015-01-01T00:00:00-CME-001
Edit CME
Delete CME
Add Prediction
No Prediction Entered for this CME yet!



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Prediction Form for CME (2014-01-01T00:00:00-CME-001)

Enter submission time in format (yyyy-MM-dd'T'HH:mm'Z' i.e. 2012-07-12T16:52Z) :

Method Type ([details](#)):

Prediction notes: (Please include all initial conditions/parameters used in your prediction)

- Select ---
- Anemomilos
- Ballistic projection
- BHV
- DBM
- ECA
- ESA
- H3DMHD (HAFv.3+3DMHD)
- HAFv.3
- HAFv2w
- HI J-map
- Other
- Other (ips.gov.au)
- Other (SIDC)
- STOA
- TH
- WSA-Enlil + Cone
- WSA-Enlil + Cone (GSFC SWRC)
- WSA-Enlil + Cone (NOAA/SWPC)

Enter predicted CME shock arrival time in format (yyyy-MM-dd'T'HH:mm'Z' i.e. 2012-07-12T16:52Z) :

Positive Error Bar in hours (optional):

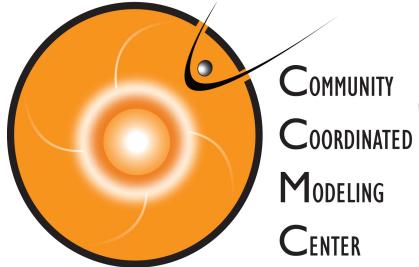
Negative Error Bar in hours (optional):

Kp Range Lower Limit (optional):

Kp Range Upper Limit (optional):

Dst min. in nT (optional):

Dst min. time in format (yyyy-MM-dd'T'HH:mm'Z' i.e. 2012-07-12T16:52Z) (optional):



CME Arrival Time Scoreboard

developed at the CCMC



The CME scoreboard is a research-based forecasting methods validation activity which provides a central location for the community to:

- submit their forecast in real-time
- quickly view all forecasts at once in real-time
- compare forecasting methods when the event has arrived

<http://swrc.gsfc.nasa.gov/main/cmemodels>

<http://kauai.ccmc.gsfc.nasa.gov/SWScoreBoard>



Please join! All prediction methods are welcome and all are encouraged to participate. Currently registered models include:

Anemomilos, ESA Model, H3DMHD (HAFv.3 +3DMHD), HAFv.3, STOA, WSA-Enlil + Cone Model, BHV Model, DBM, ECA Model, Expansion Speed Prediction Model, HelTomo, HI J-map technique, TH Model

The scoreboard also includes predictions from the SWRC (Space Weather Research Center) which is a CCMC branch carrying out in-house research-based space weather ops team